

## **Chapter 21.56**

# **FLOOD DAMAGE PREVENTION**

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### **21.56.010 Statement of purpose.**

It is the purpose of this chapter to meet the requirements of the Federal Flood Administration for federal flood insurance availability and to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- (1) To protect human life and health;
- (2) To minimize expenditure of public money and costly flood-control projects;
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) To minimize prolonged business interruptions;
- (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
- (6) To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- (7) To ensure that potential buyers are notified that property is in an area of special flood hazard; and
- (8) To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. (Ord. 3946 § 1 (part), 2004)

#### **21.56.015 Methods of reducing flood losses.**

In order to accomplish its purposes, this chapter includes methods and provisions for:

- (1) Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- (2) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- (4) Controlling filling, grading, dredging, and other development which may increase flood damage; and
- (5) Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or may increase flood hazards in other areas. (Ord. 3946 § 1 (part), 2004)

#### **21.56.020 Definitions.**

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application.

- (1) “Appeal” means a request for a review of the building official’s interpretation of any provision of this chapter or a request for a variance.

(2) “Area of shallow flooding” means a designated AO or AH zone on the flood insurance rate map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident. AO is characterized as sheet flow and AH indicates ponding.

(3) “Area of special flood hazard” means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

(4) “Base flood” means the flood having a one percent chance of being equalled or exceeded in any given year. Also referred to as the “one-hundred-year flood.” Designation on maps always includes the letters A or V.

(5) “Basement” means any area of the building having its floor subgrade (below ground level) on all sides.

(6) “Critical facility” means a facility for which even a slight chance of flooding might be too great. Critical facilities include but are not limited to schools, nursing homes, hospitals, police, fire and emergency response installations and installations which produce, use or store hazardous materials or hazardous waste.

(7) “Development” means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment located within the area of special flood hazard.

(8) “Flood” or “flooding” means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(A) The overflow of inland or tidal waters; and/or

(B) The unusual and rapid accumulation of runoff of surface waters from any source.

(9) “Flood insurance rate map (FIRM)” means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

(10) “Flood insurance study” means the official report provided by the Federal Insurance Administration that includes flood profiles, the flood boundary-floodway map, and the water surface elevation of the base flood.

(11) “Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

(12) “Lowest floor” means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building’s lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of this chapter found at Section [21.56.090](#)(1)(B).

(13) “Manufactured home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than one hundred eighty consecutive days. For insurance purposes, the term “manufactured home” does not include park trailers, travel trailers, and other similar vehicles.

(14) “Manufactured home park or subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

(15) “New construction” means structures for which the “start of construction” commenced on or after the effective date of the ordinance codified in this chapter.

(16) “Recreational vehicle” means a vehicle:

(A) Built on a single chassis;

(B) Four hundred square feet or less when measured at the largest horizontal projection;

(C) Designed to be self-propelled or permanently towable by a light duty truck; and

(D) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel or seasonal use.

(17) “Start of construction” includes substantial improvement, and means the date the building permit was issued; provided, the actual start of construction, repair, reconstruction, placement or other improvement was within one hundred eighty days of the permit date. The “actual start” means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundation or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

(18) “Structure” means a walled and roofed building including a gas or liquid storage tank that is primarily above ground.

(19) “Substantial improvement” means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure either:

(A) Before the improvement or repair is started; or

(B) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:

- (i) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions; or
  - (ii) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.
- (20) “Water dependent” means a structure for commerce or industry which cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.
- (21) “Variance” means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter. (Ord. 4004 § 9, 2005: Ord. 3946 § 1 (part), 2004)

#### **21.56.025 Lands to which this chapter applies.**

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Kirkland. (Ord. 3946 § 1 (part), 2004)

#### **21.56.030 Basis for establishing the areas of special flood hazard.**

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled “The Flood Insurance Study for the City of Kirkland” dated September 30, 1993, having an effective date of May 16, 1995, and any revisions thereto with accompanying flood insurance maps is adopted by reference and declared to be a part of this chapter. The flood insurance study is on file at City Hall, 123 Fifth Avenue, Kirkland, WA 98033. (Ord. 4004 § 10, 2005: Ord. 3946 § 1 (part), 2004)

#### **21.56.035 Penalties for noncompliance.**

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall be guilty of a simple crime and subject to the penalties provided therefor in Section [1.04.010](#)(C) of this code. Each day of violation shall constitute a separate offense. Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation. (Ord. 3946 § 1 (part), 2004)

#### **21.56.040 Abrogation and greater restrictions.**

This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes

the more stringent restrictions shall prevail. (Ord. 3946 § 1 (part), 2004)

### **21.56.045 Interpretation.**

In the interpretation and application of this chapter, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes. (Ord. 3946 § 1 (part), 2004)

### **21.56.050 Warning and disclaimer of liability.**

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city of Kirkland, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages or injury that may result from reliance on this chapter or any administrative decision, act or omission made hereunder. (Ord. 3946 § 1 (part), 2004)

### **21.56.055 Development permit required.**

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section [21.56.030](#). The permit shall be for all structures including manufactured homes, as set forth in the definitions, Section [21.56.020](#), and for all development including fill and other activities, also as set forth in the definitions. (Ord. 3946 § 1 (part), 2004)

### **21.56.060 Application for development permit.**

Application for a development permit shall be made on forms furnished by the city and may include but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the areas in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- (1) Elevation in relation to mean sea level of the lowest floor (including basement) of all structures;
- (2) Elevation in relation to mean sea level to which any structure has been floodproofed;
- (3) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section [21.56.090](#)(2); and
- (4) Description of the extent to which a watercourse will be altered or relocated as a result of the proposed development. (Ord. 3946 § 1 (part), 2004)

### **21.56.065 Designation of the building official as administrator.**

The building official for the city is appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions. (Ord. 3946 § 1 (part), 2004)

### **21.56.070 Duties and responsibilities of the building official.**

Duties of the building official shall include, but not be limited to:

(1) Permit Review.

(A) Review all development permits to determine that the permit requirements of this chapter have been satisfied;

(B) Review all development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required;

(C) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section [21.56.095](#)(1) are met.

(2) Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with Section [21.56.030](#), the building official shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer Sections [21.56.090](#) and [21.56.095](#).

(3) Information to Be Obtained and Maintained.

(A) Where base flood elevation data is provided through the flood insurance study or required as in subsection (2) of this section, obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement;

(B) For all new or substantially improved floodproofed structures:

(i) Verify and record the actual elevation (in relation to mean sea level), and

(ii) Maintain the floodproofing certifications required in Section [21.56.060](#)(3);

(C) Maintain for public inspection all records pertaining to the provisions of this chapter.

(4) Alteration of Watercourses.

(A) Notify adjacent communities and the Washington State Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration;

(B) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.

(5) Interpretation of FIRM Boundaries. Make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section [21.56.075](#). (Ord. 3946 § 1 (part), 2004)

### **21.56.075 Appeal and variance procedure—Hearing examiner.**

(a) The hearing examiner as established by Chapter 3.34 of this code shall hear and decide appeals and requests for variances from the requirements of this chapter.

(b) The hearing examiner shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the building official in the enforcement or administration of this chapter.

(c) A final decision of the hearing examiner shall not be subject to judicial review unless request for writ of review therefor is filed with the King County superior court and served upon the city of Kirkland within twenty days of the date of said final decision.

(d) In passing upon such applications, the hearing examiner shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:

- (1) The danger that materials may be swept onto other lands to the injury of others;
- (2) The danger to life and property due to flooding or erosion damage;
- (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (4) The importance of the services provided by the proposed facility to the community;
- (5) The necessity to the facility of a waterfront location, where applicable;
- (6) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (7) The compatibility of the proposed use with existing and anticipated development;
- (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (10) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
- (11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.



(e) Upon construction of the factors of subsection (d) of this section, and the purposes of this chapter, the hearing examiner may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.

(f) The hearing examiner, in carrying out his duties under this section, shall utilize the quasi-judicial hearing procedures established for Process I appeals, Sections 145.60 through Section 145.105, inclusive, of the zoning code. To the extent of any conflict between said Process I provisions and this chapter, the provisions of this chapter shall prevail.

(g) The building official shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request. (Ord. 3946 § 1 (part), 2004)

### **21.56.080 Conditions for variances.**

(a) Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (1) through (11) in Section [21.56.075](#)(d) have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.

(b) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this section.

(c) Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.

(d) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(e) Variances shall only be issued upon:

(1) A showing of good and sufficient cause;

(2) A determination that failure to grant the variance would result in exceptional hardship to the applicant;

(3) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section [21.56.075](#)(d), or conflict with existing local laws or ordinances.

(f) Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

(g) Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except subsection (a) of this section, and otherwise complies with Sections [21.56.085](#)(1) and (2).

(h) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. (Ord. 3946 § 1 (part), 2004)

### **21.56.085 Provisions for flood hazard reduction—General standards.**

In all areas of special flood hazards, the following standards are required:

(1) Anchoring.

(A) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

(B) All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors. (For more detailed information, refer to guidebook FEMA-85 “Manufactured Home Installation in Flood Hazard Areas.”)

(2) Construction Materials and Methods.

(A) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(B) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

(C) Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(3) Utilities.

(A) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.

(B) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters.

(C) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

(4) Subdivision Proposals.

(A) All subdivision proposals shall be consistent with the need to minimize flood damage.

(B) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

(C) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.

(D) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least fifty lots or five acres (whichever is less).

(5) Review of Building Permits. Where elevation data is not available either through the flood insurance study or from another authoritative source (Section 21.56.070(2)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates. (Ord. 4004 § 11, 2005; Ord. 3946 § 1 (part), 2004)

### **21.56.090 Provisions for flood hazard reduction—Specific standards.**

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Sections [21.56.030](#) or [21.56.070](#)(2), the following provisions are required:

(1) Residential Construction.

(A) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above base flood elevation.

(B) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(i) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

(ii) The bottom of all openings shall be no higher than one foot above grade.

(iii) Openings may be equipped with screens, louvers, or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters.

(2) Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more above the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

(A) Be floodproofed so that below one foot above the base flood level the structure is watertight with walls substantially impermeable to the passage of water;

(B) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(C) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural designs, specifications and plans. Such certification shall be provided to the official as set forth in Section [21.56.070](#)(3)(B);

(D) Nonresidential structures that are elevated, not floodproof, must meet the same standards for space below the lowest floor as described in subsection (1)(B) of this section;

(E) Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g., a building constructed to one foot above the base flood level will be rated as one foot below that level).

(3) Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the base floodplain. Construction of new critical facilities shall be permissible within the base floodplain if no feasible alternative site is available. Critical facilities constructed within the base floodplain shall have the lowest floor elevated to three feet or more above the level of the base flood elevation at the site. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base floodplain shall be provided to all critical facilities to the extent possible.

(4) Manufactured Homes. All manufactured homes to be placed or substantially improved within zones A1—30, AH, and AE shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is one foot or more above the base flood elevation; and be securely anchored to an adequately anchored foundation system in accordance with the provisions of Section [21.56.085](#) (1)(B).

(5) Recreational vehicles placed on sites are required to either:

(A) Be on the site for fewer than one hundred eighty consecutive days; or

(B) Be fully licensed and ready for highway use, on wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or

(C) Meet the requirements of subsection (4) of this section. (Ord. 4004 § 12, 2005: Ord. 3946 § 1 (part), 2004)

### **21.56.095 Floodways.**

Located within areas of special flood hazard established in Section [21.56.030](#) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(2) If subsection (1) of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Sections [21.56.085](#) through [21.56.105](#).

(3) Construction or reconstruction of residential structures is prohibited within designated floodways, except for (A) repairs, reconstruction or improvements to a structure which do not increase the ground floor, and (B) repairs, reconstruction or improvements to a structure, the cost of which does not exceed fifty percent of the market value of the structure, either (i) before the repair, reconstruction or improvement is started or (ii) if the structure has been damaged and is being restored before the damage occurred. Work done on structures to comply with existing health, sanitary or safety codes, or to structures identified as historic places, may not be included in the fifty percent of market value limitation. (Ord. 4004 § 13, 2005: Ord. 3946 § 1 (part), 2004)

#### **21.56.100 Wetlands management.**

To the maximum extent possible, the short-term and long-term adverse impacts associated with the destruction or modification of wetlands, especially those activities which limit or disrupt the ability of the wetland to alleviate flooding impacts, shall be avoided. The following process or equivalent have been implemented (see Chapter 90, the zoning ordinance, and Chapter 24.02 of this code):

(1) Review of proposals for development within base floodplains for their possible impacts on wetlands located within the floodplain;

(2) Ensuring that development activities in and around wetlands do not negatively affect public safety, health and welfare by disrupting the wetlands' ability to reduce flood and storm drainage;

(3) Requesting technical assistance from the Department of Ecology in identifying wetland areas. Existing wetland map information from the National Wetlands Inventory (NWI) may be used in conjunction with the community's FIRM to indicate critical wetland areas deserving special attention. (Ord. 3946 § 1 (part), 2004)

#### **21.56.105 Standards for shallow flooding areas (AO zones).**

Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from one to three feet where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

(1) New construction and substantial improvements of residential structures within AO zones shall have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, to or above the depth number specified on the FIRM (at least two feet if no depth number is specified).

(2) New construction and substantial improvements of nonresidential structures within AO zones shall either:

(A) Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, to or above the depth number specified on the FIRM (at least two feet if no depth number is specified); or

(B) Together with attendant utility and sanitary facilities, be completely floodproofed to one foot above the depth number specified on the FIRM so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect as in Section [21.56.090](#)(2)(C).

(3) Require adequate drainage paths around structure on slopes to guide floodwaters around and away from proposed structures.

(4) Recreational vehicles placed on sites within AO zones on the community's FIRM are required to either:

(A) Be on the site for fewer than one hundred eighty consecutive days; or

(B) Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or

(C) Meet the requirements of subsections (1) and (3) of this section and the anchoring requirements for manufactured homes in Section [21.56.085](#)(1)(B). (Ord. 4004 § 14, 2005: Ord. 3946 § 1 (part), 2004)

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